

CLAIMS

Sub D1

1. A process for producing an anti-oxidant in a medium comprising a component which is a plant or part thereof, which method comprises expressing in the component or part thereof a recombinant enzyme which acts on a glucan substrate present in the medium and/or the component or part thereof, to yield said anti-oxidant.

2. A process according to claim 1 wherein the glucan comprises  $\alpha$ -1,4 links.

3. A process according to claim 2 wherein the glucan is starch.

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4. A process according to <sup>claim 1</sup> ~~any one of claims 1 to 3~~ wherein the enzyme is a glucan lyase.

5. A process according to claim 4, wherein the enzyme is an  $\alpha$ -1,4-glucan lyase.

6. A process according to claim 5, wherein the enzyme comprises any one of the sequences shown as SEQ ID Nos 1-6, or a variant, homologue or fragment thereof.

7. A process according to claim 6, wherein the enzyme is any one of the sequences shown as SEQ ID Nos 1-6.

8. A process according to <sup>claim 4</sup> ~~any one of claims 4 to 7~~, wherein the enzyme is encoded by a nucleotide sequence comprising any one of the sequences shown as SEQ ID Nos 7-12, or a variant, homologue or fragment thereof.

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9. A process according to claim 8, wherein the enzyme is encoded by a nucleotide sequence having any one of the sequences shown as SEQ ID Nos 7-12.

10. A process according to <sup>claim 1</sup> ~~any one of the preceding claims~~ wherein the anti-oxidant is produced in the plant component, or part thereof, and is then released into the medium.

11. A process according to <sup>claim 1</sup> ~~any one of the preceding claims~~, wherein the anti-oxidant is anhydrofructose.

12. A process according to claim 11, wherein the anti-oxidant is 1,5-D-anhydrofructose.
13. A process according to <sup>claim 1</sup> ~~any one of the preceding claims~~, wherein the medium, is, or is used in the preparation of, a foodstuff.
14. A process according to claim 13, wherein the foodstuff is a beverage.
15. A process according to claim 14, wherein the beverage is an alcoholic beverage.
16. A process according to claim 14, wherein the beverage is a wine.
17. A process according to claim 13, wherein the component is all or part of a cereal or a fruit.
18. A process according to claim 17, wherein the component is all or part of a grape.
19. Use of anhydrofructose as an anti-oxidant for a medium comprising at least one component which is a plant or part thereof wherein the anhydrofructose is prepared *in situ* in the medium.
20. Use of anhydrofructose as a means for imparting or improving stress tolerance in a plant, wherein the anhydrofructose is prepared *in situ* in the plant.
21. Use of anhydrofructose as a means for imparting or improving the transformation of a grape, wherein the anhydrofructose is prepared *in situ* in the grape.
22. Use of glucan lyase as a means for imparting or improving stress tolerance in a plant, wherein the glucan lyase is prepared *in situ* in the plant.
23. Use of glucan lyase as a means for imparting or improving the transformation of a grape, wherein the glucan lyase is prepared *in situ* in the grape.

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24. Use of a nucleotide sequence coding for a glucan lyase as a means for imparting or improving stress tolerance in a plant, wherein the nucleotide sequence is expressed *in situ* in the plant.

25. Use of a nucleotide sequence coding for a glucan lyase as a means for imparting or improving the transformation of a grape, wherein the nucleotide sequence is expressed *in situ* in the grape.

add  
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